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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/972,626	10/05/2001	Toyoharu Oohata	09792909-5236	4383

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EXAMINER

NGUYEN, DONGHAI D

ART UNIT PAPER NUMBER

3729

DATE MAILED: 05/09/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/972,626

Applicant(s)

OOHATA, TOYOHARU

Examiner

Donghai D. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

2. Figures 11A and 11B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "METHOD OF TRANSFERRING AND MOUNTING DEVICES".

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The preamble of the claim directs to the method of mounting, but there is no mounting step in the claimed invention.

It is uncertain that "a device" in the preamble is the same or different from "a plurality of devices" (claim 1, line 2-3; etc.).

The phrases "a device separating step of" (claim 1, line 3), "a device re-arraying step of" (claim 1, line 6), and "a device transferring step of" (claim 1, line 10), "a discrete selection procedure of" (claim 2, lines 2-3), "a partial transfer procedure of" (claim 2, lines 6-7), "a fixation procedure of" (claim 4, line 3), "an enlargement procedure of" (claim 4, line 7), and etc. are redundant and awkwardly worded.

The phrase "the arrayed state" (claim 1, line 5) lacks antecedent basis.

The phrase "while keeping the arrayed state of the devices as it is" (claim 1, lines 2-3, 11-12, claim 4, lines 5-6; etc.) is vague and indefinite. It is uncertain as to how the array of devices was being separated and stays "as it is". What is "the arrayed state"?

Several phrases in the claims are vague and indefinite, for example: "a device re-arraying ... specific magnification" (claim 1, lines 6-9). It is unclear as to how the separated device are "re-arrayed", particularly it is uncertain as to the "intervals" recited in the claim having "a value equivalent to the period multiplied by a specific magnification". Note that the value of the intervals is unknown or cannot be determined since there is no recitation in the claim providing any definite range/value. What is the exact "specific magnification"? In pages 12, 14, and 29 of

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the specification provide the magnification as 10, 81, and 24. However, it is unclear as to the exact range/value of the "specific magnification" applicant is referring to.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-10, as best as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 4,465,543 to Sadamasa et al.

Regarding claim 1, Sadamasa et al disclose a device mounting method comprising: separating a plurality of devices (100), which have been arrayed with a specific period on a wafer (A / inherece, it is a common method to form semiconductor devices on wafer), into individual devices (P); handling the individually separated devices so as to re-array the devices at intervals of a value larger than the period (Figs. 3 and 4); and transferring the re-arrayed devices (Col. 2, lines 37-42) on a mounting board (Col. 7, lines 63-65) while keeping the re-arrayed state of the devices as it is.

Claims 2 and 4 also met as set forth above.

Claims 7 and 8 see Figs. 3 and 4.

Regarding claim 10, Sadamasa et al. disclose a device mounting method comprising: transferring a plurality of devices (P), which have been arrayed on a wafer (A), on a mounting

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board (Col. 7, lines 63-65); wherein the devices are discretely mounted on the mounting board-in such a manner as to be re-arrayed with scaled-up intervals (Figs. 3 and 4).

Regarding claim 3, 5, 6, and 9. It would have been an obvious matter of design choice to choose any desired separating step by irradiating the selected device with high energy beam emitted from the back of the wafer and magnification step by a film-like support deformable, since Applicant have not disclosed that the claimed specifics separating step by irradiating the selected device with high energy beam emitted from the back of the wafer and magnification step by a film-like support deformable, solve any stated problem or are for any particular purpose and they appear that the invention would perform well with any other separating step and magnification step as disclosed by Kakiyama.

8. Claims 1 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by JP Patent 56-17385.

Regarding claim 1, 56-17385 discloses a device mounting method comprising: separating a plurality of devices (35a, 35b, etc.), which have been arrayed with a specific period on a wafer (30), into individual devices (35a; etc.); handling the individually separated devices so as to re-array the devices at intervals of a value larger than the period (Figs. 2- 3); and transferring the re-arrayed devices (Fig. 4) on a mounting board (31) while keeping the re-arrayed state of the devices as it is.

Regarding claim 10, 56-17385 discloses a device mounting method comprising: transferring a plurality of devices (35a, etc.), which have been arrayed on a wafer (30), on a

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mounting board (31); wherein the devices are discretely mounted on the mounting board in such a manner as to be re-arrayed with scaled-up intervals (Figs. 2- 4).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghai D. Nguyen whose telephone number is (703) 305-7859. The examiner can normally be reached on Monday-Friday (9:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (703) 308-1789. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7307 for regular communications and (703) 305-3579 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.

DN
May 5, 2003

A handwritten signature in dark ink, appearing to read 'Peter Vo', with a long horizontal line extending from the end of the signature.

PETER VO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700